

IN THE CLAIMS

1. (Previously Presented) A computer system comprising one or more central processing units and one or more memories, the system further comprising:

5 one or more sensors that sense one or more characteristics of a user and convert the characteristics into a first digital representation that is stored in one or more of the memories, the first digital representation having one or more subcharacteristics, the subcharacteristics being invariant over time, insensitive to common sensing artifacts, and capable of being repeatably extracted;

10 a distortion process that selectably distorts the first digital representation into a distorted digital representation by distorting at least one of the subcharacteristics, the distortion process being repeatable and non-invertible; and

a comparison process that compares one or more sets of the distorted subcharacteristics to one or more stored sets of distorted subcharacteristics to determine  
15 the identity of the user.

2. (Original) A system, as in claim 1, where the characteristics include any one or more of the following: a fingerprint, a face, a hand, an iris of an eye, a pattern of subdermal blood vessels, a spoken phrase, and a signature.

20 3. (Original) A system, as in claim 1, where the subcharacteristics include any one or more of the following: a complete biometric, a partial biometric, a feature, a feature position, a feature property, a relation between two or more features, a subregion of an image.

25 4. (Canceled)

5. (Previously Presented) A system, as in claim 1, where the distortion is applied to a orthogonal Cartesian grid partitioning of the first digital representation.

6. (Previously Presented) A system, as in claim 1, where the distortion is applied to a circular polar-coordinate grid partitioning of the first digital representation.

7. (Previously Presented) A system, as in claim 1, where the distortion  
5 process is a geometric distortion of the first digital representation.

8. (Previously Presented) A system, as in claim 1, where the distortion process is a block scrambling of the first digital representation.

10 9. (Original) A system, as in claim 1, where the first digital representation is quantized at a particular level.

10. (Presently Amended) A system, as in claim 9, where the distorted digital representation has a larger range relative to ~~the~~ a range of the first digital representation.

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11. (Previously Presented) A system, as in claim 1, where the distortion process is applied within a canonical reference frame associated with the first digital representation.

20 12. (Previously Presented) A system, as in claim 11, where the characteristic being sensed is a fingerprint and the canonical reference frame is defined with its origin at a position of a core point and with one axis passing through a position of a delta point.

13. (Original) A system, as in claim 11, where the characteristic being sensed  
25 is a face and the canonical reference frame is defined with its origin at the position of one eye and with one axis passing through the position of the other eye.

14. (Original) A system, as in claim 11, where a previously stored representation is aligned with the current representation, the parameters of the alignment  
30 being used to derive a canonical reference frame.

15. (Original) A system, as in claim 1, where the comparison process provides either a unique recognition ID for the user corresponding to one of the people enrolled in the database or a non-recognition indication.

5 16. (Original) A system, as in claim 1, where the matching process takes as an additional input the proposed ID of the user and verifies this identity by returning a yes or no answer.

10 17. (Original) A system, as in claim 1, where the second digital representation is discarded and replaced by a new second digital representation distorted by a new distorted process.

15 18. (Original) A system, as in claim 17, where the new second digital representation replaces the second digital representation in one or more of the following circumstances: a passage of time; invalid access attempts, a customer request, a second user request, a physical user request.

20 19. (Original) A system, as in claim 1, where the sets of the distorted subcharacteristics correspond to one or more of the following: one or more minutiae in a fingerprint, a location of eyes, nose, and mouth in a face, a phase and contrast of optical texture in an iris, a set of formant frequencies and their time derivatives in a speech signal, and one or more joint lengths and widths in a hand.

25 20. (Original) A system, as in claim 1, where the distortion process is a geometric distortion of the first digital representation.

21. (Original) A system, as in claim 1, where the distortion process is a block scrambling of the first digital representation.

22. (Previously Presented) A method for generating a biometric comprising the steps of:

selectably distorting a first digital representation of one or more biometrics into a distorted digital representation by distorting at least one subcharacteristic of the biometric, the distortion process being repeatable and non-invertible; and

comparing one or more sets of the distorted subcharacteristics to one or more stored sets of distorted subcharacteristics, distorted by the distortion process, to determine the identity of a user.

23. (Previously Presented) A system for generating a biometric comprising:

means for selectably distorting a first digital representation of one or more biometrics into a distorted digital representation by distorting at least one subcharacteristic of the biometric, the distortion process being repeatable and non-invertible; and

means for comparing one or more sets of the distorted subcharacteristics to one or more stored sets of distorted subcharacteristics, distorted by the distortion process, to determine the identity of a user.

24. (Previously Presented) A computer program product that executes the following steps:

selectably distorting a first digital representation of one or more biometrics into a distorted digital representation by distorting at least one subcharacteristic of the biometric, the distortion process being repeatable and non-invertible; and

comparing one or more sets of the distorted subcharacteristics to one or more stored sets of distorted subcharacteristics, distorted by the distortion process, to determine the identity of a user.